

## **Abstract of the Disclosure**

A method increases transmit diversity gain in a wireless communication system. In the wireless network, a transmitter has multiple antennas and a receiver has one antenna. A phase of each of received signal is measured. One signal is selected as a reference signal. For each other signal, a phase, with respect to the phase of the reference signal, is measured independently to determine feedback information indicating a required rotation of each other signal so that a phase of each other rotated signal is within an identical quadrant as the phase of the reference signal. The feedback information for each other signal is sent to the transmitter. In the transmitter, each other signal is phase rotated according to the corresponding feedback information before the signal is transmitting to the receiver.